



# UNITED STATES PATENT AND TRADEMARK OFFICE

ml

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,666	09/24/2003	Junsaku Nakajima	49954 DIV-1 (70551)	8361

7590 11/07/2006

David G. Conlin  
EDWARDS & ANGELL, LLP  
P.O. Box 55874  
Boston, MA 02205

EXAMINER

ORTIZ CRIADO, JORGE L

ART UNIT PAPER NUMBER

2627

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/670,666	<b>Applicant(s)</b> NAKAJIMA ET AL.	
	<b>Examiner</b> Jorge L. Ortiz-Criado	<b>Art Unit</b> 2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-33 is/are pending in the application.
- 4a) Of the above claim(s) 15-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 5-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wachi J.P. Publication No. 07-021588.

Regarding claim 5, Wachi discloses an optical disc (10) including a substrate having pits (11, 16) having at least two different depths formed therein, wherein the pits have their depths adjusted such that polarity of a signal representing difference in intensity distribution of a reflected light beam along a tangential direction of a pit string differ at a pit having a first depth (d1) from a pit having a second depth (d2) and information (13, 18) is recorded by a change of said polarity (see Abstract; Fig. 1; [0016]-[0017]; [0019]-[0021]).

Regarding claim 6, Wachi discloses an optical disc (10) including a substrate having pits (11, 16) having at least two different depths (d1, d2) formed therein, wherein information (13,18) is recorded in accordance with a change of a polarity of a signal representing difference in intensity distribution of a reflected light beam along a tangential direction of a pit string, at said pits having at least two different depths (see Abstract; Fig. 1; [0016]-[0017]; [0019]-[0021]).

Regarding claim 7, Wachi discloses an optical disc (10) including a substrate having pits (11, 16) having at least two different depths (d1, d2) formed therein, wherein information (13,18) is recorded by a combination a change of a signal in accordance with quantity of reflected light beam from said pits having at least two different depths (d1, d2) and a change of a signal indicative of a difference in intensity distribution of the reflected light beam along a tangential direction of a pit string (see Abstract; Fig. 1, [0016]-[0017]; [0019]-[0021]).

Regarding claim 8, Wachi discloses an optical disc (10) including a substrate having pits (11, 16) having at least two different depths formed therein, wherein main information (13) is recorded by a form of the pits, and additional information (18) is recorded by a difference of the depths of the pits (see Abstract; Fig. 1; [0016]-[0017]; [0019]-[0021]).

Regarding claim 9, Wachi discloses wherein the pit having said additional information is formed deeper than a prescribed depth (see Abstract; Fig. 1).

In regard to claim 10, Wachi discloses wherein said additional information is a synchronizing signal for reproducing said optical disc (see Fig. 1, information 18).

In regard to claim 11, Wachi discloses wherein said additional information is address information (18) corresponding to said main information (see Fig. 1, information 18).

In regard to claim 14, Wachi discloses wherein unit of recording of said additional information is recorded in association with a unit of recording of said main information (see Abstract; Fig. 1; [0016]-[0017]; [0019]-[0021]).

In regard to claims 12-13, wherein said additional information is a de-scramble key of said main information, error correction information for said main information (this features are merely assisting information necessary for reproducing information of the optical disc that additional information may include in the conventional optical discs, inherently present in Wachi).

### ***Response to Arguments***

Applicant's arguments filed 09/01/2006 have been fully considered but they are not persuasive.

Applicant argues that Wachi reference failed to teach, disclose or suggest that information is, or should be or could be, recorded on an optical disc either by a change in the polarity of tangential push-pull signal derived from pits formed in the disc or by a difference in depth of pits formed in the disc.

The examiner cannot concur because first Applicant appears to acknowledge in his remarks that Wachi does disclose information recorded, which recites "Applicant respectfully submits that Wachi makes it clear that the information recorded on the optical disc therein disclosed...".

Also because Wachi reference discloses where information (13,18) is in fact recorded on an optical disc (10) either by a change in the polarity of tangential push-pull signal formed in the disc or by a difference in depth of pits formed in the disc, as well explained in at least the Abstract and/or paragraphs [0016]-[0017]; [0019]-[0021]) derived from pits (11,16).

Furthermore, Wachi discloses the same change in the polarity of tangential push-pull signal or difference in depth of pits formed in the disc disclosed by Applicant's, the pits having two different depths  $d_1$  and  $d_2$  with the depth  $\lambda/4n$  at which the polarity of the tracking push-pull (TPP) signal is reversed in between, on the optical disc. As to the conditions for  $d_1$  and  $d_2$ , the following relationship is satisfied:  $0 < d_1 < \lambda/4n$  and  $\lambda/4n < d_2 < \lambda/2n$ .

Applicant further argues that because Wachi reference discloses removal of a so-called "direct-current-offset" from the signals utilized to control a tracking servo for a reading an optical disc, the claimed invention is not anticipated.

But the examiner cannot find how these features, which explain one of the advantage of Wachi reference, overcome any rejection outlined above. Applicant's arguments do not clearly point out the patentable novelty, which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L. Ortiz-Criado whose telephone number is (571) 272-7624. The examiner can normally be reached on Mon.-Thu.(12:30 pm- 9:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

joc

  
ANDREA WELLINGTON  
SUPERVISORY PATENT EXAMINER